

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION

UNITED STATES, *et al.*,

Plaintiffs,

vs.

GOOGLE LLC,

Defendant.

No. 1:23-cv-00108-LMB-JFA

**MEMORANDUM OF LAW IN SUPPORT OF GOOGLE LLC's
MOTION TO EXCLUDE THE TESTIMONY OF PROF. ROBIN S. LEE**

TABLE OF CONTENTS

INTRODUCTION.....	1
BACKGROUND.....	3
ARGUMENT	12
I. LEE’S METHODOLOGY FOR DEFINING THE RELEVANT MARKETS IS UNRELIABLE AND CONTRARY TO LAW.	13
A. There Is No Such Thing as a Market for Ad Tech Tools for “Open-Web Display Advertising.”	14
B. Lee’s Hypothetical Monopolist Test Is Unsupported by the Record.	16
1. Lee’s Failure to Conduct a Quantitative Analysis Requires Exclusion of His Market Definition.	17
2. Lee Fails to Perform Any Quantitative Analysis Constituting an HMT.....	19
C. Lee’s Worldwide Market Is Irrelevant and Unreliable.....	21
1. Lee’s Worldwide Market is Not Relevant to Plaintiffs’ Case.....	22
2. Lee’s Worldwide Geographic Market Definition Is Unreliable Because He Misapplies His Own Methodology.....	23
II. LEE’S MARKET SHARE CALCULATIONS MUST BE EXCLUDED AS INCONSISTENT WITH HIS PROPOSED MARKET DEFINITIONS AND THE LAW.	24
A. Lee’s Market Share Calculations Must Consider All Ad Impressions Transacted by Each Tool That Can “Readily Shift” from Transacting Non-Open-Web Display Ad Impressions to Transacting More Open-Web Display Ad Impressions.	25
B. Lee’s Market Share Calculations Are Unreliable Because They Fail to Account for All Ad Impressions That Must Be Considered in Evaluating Google’s Share of the Relevant Markets.....	28
CONCLUSION.....	30

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Am. Bearing Co. v. Litton Indus., Inc.</i> , 729 F.2d 943 (3d Cir. 1984).....	30
<i>Apple v. Epic</i> , 67 F.4th 946 (9th Cir. 2023)	17, 29
<i>Bepco, Inc. v. Allied-Signal, Inc.</i> , 106 F. Supp. 2d 814 (M.D.N.C. 2000).....	25, 26, 27
<i>Berlyn, Inc. v. Gazette Newspapers, Inc.</i> , 223 F. Supp. 2d 718 (D. Md. 2002), <i>aff'd</i> 73 F. App'x 576 (4th Cir. 2003)	1
<i>Blue Cross & Blue Shield United of Wisc. v. Marshfield Clinic</i> , 65 F.3d 1406 (7th Cir. 1995), <i>as amended on denial of reh'g</i> (Oct. 13, 1995)	25, 28
<i>Brown Shoe Co. v. United States</i> , 370 U.S. 294 (1962).....	18
<i>Cogan v. Harford Memorial Hosp.</i> , 843 F. Supp. 1013 (D. Md. 1994)	1
<i>Concord Boat Corp. v. Brunswick Corp.</i> , 207 F.3d 1039 (8th Cir. 2000).....	15
<i>Consul, Ltd. v. Transco Energy Co.</i> , 805 F.2d 490 (4th Cir. 1986).....	21
<i>Daubert v. Merrell Dow Pharms., Inc.</i> , 509 U.S. 579 (1993).....	12, 13
<i>E.I. Du Pont De Nemours & Co. v. Kolon Indus.</i> , 683 F. Supp. 2d 401 (E.D. Va. 2009).....	23
<i>Fed. Hous. Fin. Agency v. Nomura Holding Am., Inc.</i> , 2015 WL 640875 (S.D.N.Y. Feb. 16, 2015).....	13
<i>FTC v. Microsoft Corp.</i> , 681 F. Supp. 3d 1069 (N.D. Cal. 2023)	14
<i>Gen. Elec. Co. v. Joiner</i> , 522 U.S. 136 (1997).....	30

<i>Gulf States Reorganization Grp., Inc. v. Nucor Corp.</i> , 822 F. Supp. 2d 1201 (N.D. Ala. 2011), <i>aff'd</i> , 721 F.3d 1281 (11th Cir. 2013).....	28
<i>Hicks v. PGA Tour, Inc.</i> , 897 F.3d 1109 (9th Cir. 2018).....	15
<i>In re Am. Express Anti-Steering Rules Antitrust Litig.</i> , 361 F. Supp. 3d 324 (E.D.N.Y. 2019)	19
<i>In re Payment Card Interchange Fee & Merchant Discount Antitrust Litig.</i> , 2022 WL 15053250 (E.D.N.Y. Oct. 26, 2022).....	13
<i>In re Zetia (Ezetimibe) Antitrust Litig.</i> , 587 F. Supp. 3d 356 (E.D. Va. 2022).....	17, 18
<i>It's My Party, Inc. v. Live Nation, Inc. (It's My Party I)</i> , 88 F. Supp. 3d 475 (D. Md. 2015), <i>aff'd</i> , 811 F.3d 676 (4th Cir. 2016).....	13
<i>It's My Party, Inc. v. Live Nation, Inc. (It's My Party II)</i> , 811 F.3d 676 (4th Cir. 2016).....	<i>passim</i>
<i>J.H. Westerbeke Corp. v. Onan Corp.</i> , 580 F. Supp. 1173 (D. Mass. 1984)	25, 28
<i>Ky. Speedway, LLC v. Nat'l Ass'n of Stock Car Auto Racing, Inc.</i> , 588 F.3d 908 (6th Cir. 2009).....	18, 20
<i>Loeffel Steel Prods., Inc. v. Delta Brands, Inc.</i> , 387 F. Supp. 2d 794 (N.D. Ill. 2005)	13
<i>Menasha Corp. v. News Am. Marketing In-Store, Inc.</i> , 354 F.3d 661 (7th Cir. 2004).....	21
<i>Ohio v. Am. Express Co.</i> , 585 U.S. 529 (2018).....	14
<i>Oksanen v. Page Memorial Hosp.</i> , 945 F.2d 696 (4th Cir. 1991) (en banc).....	14
<i>Rebel Oil Co. v. Atl. Richfield Co.</i> , 51 F.3d 1421 (9th Cir. 1995).....	26, 27, 28, 29
<i>Reifert v. S. Cent. Wisconsin MLS Corp.</i> , 450 F.3d 312 (7th Cir. 2006).....	18
<i>Satellite Television v. Continental Cablevision</i> , 714 F.2d 351 (4th Cir. 1983).....	21

<i>Stiles v. Walmart, Inc.</i> , 639 F. Supp. 3d 1029 (E.D. Cal. 2022).....	25
<i>Teradata Corp. v. SAP SE</i> , 570 F. Supp. 3d 810 (N.D. Cal. 2021)	17, 18, 19, 20
<i>Twin City Sportservice, Inc. v. Charles O. Finley & Co.</i> , 512 F.2d 1264 (9th Cir. 1975).....	26, 30
<i>TYR Sport, Inc. v. Warnaco Swimwear, Inc.</i> , 709 F. Supp. 2d 821 (C.D. Cal. 2010)	30
<i>U.S. Horticultural Supply v. Scotts Co.</i> , 367 F. App'x 305 (3d Cir. 2010)	18
<i>United States v. E.I. du Pont de Nemours & Co.</i> , 351 U.S. 377 (1956).....	13
<i>United Food & Com. Workers Loc. 1776 & Participating Emps. Health & Welfare Fund v. Teikoku Pharma USA</i> , 296 F. Supp. 3d 1142 (N.D. Cal. 2017)	13
<i>Vasquez v. Indiana Univ. Health, Inc.</i> , 40 F.4th 582 (7th Cir. 2022)	24
<i>Virginia Vermiculite, Ltd. v. W.R. Grace & Co. Conn.</i> , 108 F. Supp. 2d 549 (W.D. Va. 2000)	15
<i>Virtual Maintenance, Inc. v. Prime Computer, Inc.</i> , 11 F.3d 660 (6th Cir.1993), <i>cert. dismissed</i> , 512 U.S. 1216 (1994)	28
<i>Water Craft Mgmt., L.L.C. v. Mercury Marine</i> , 361 F. Supp. 2d 518 (M.D. La. 2004)	30
Statutes and Rules	
Federal Rule of Evidence 403	12
Federal Rule of Evidence 702	3, 12, 13
Other Authorities	
2010 Merger Guidelines.....	17, 21, 22, 23
Phillip E. Areeda & Herbert Hovenkamp, <i>Antitrust Law: An Analysis of Antitrust Principles and Their Application</i> (5th ed. 2023).....	25

INTRODUCTION

Professor Robin S. Lee is Plaintiffs’ only expert who offers opinions that seek to define relevant markets—an essential element that Plaintiffs must prove for each of their antitrust claims. In his summary of opinions, Lee attempts to define product markets for publisher ad servers, ad exchanges, and advertiser ad networks that serve and transact “open-web display advertising.” Ex. 1, ¶ 12(1).¹ But when asked at deposition, Lee did not recall having heard the term “open-web display advertising” before this case, Ex. 8 at 34:6-10, and Plaintiffs’ other principal expert economist, Rosa Abrantes-Metz, testified that the term (and the market) was created for this lawsuit. Ex. 6 at 26:22-28:5 (the “term is simply a name – a name that was given to the relevant antitrust market delineated for this case”).

“Defining markets for antitrust analysis is an extremely complex task.” *Berlyn, Inc. v. Gazette Newspapers, Inc.*, 223 F. Supp. 2d 718, 727 (D. Md. 2002), *aff’d* 73 F. App’x 576 (4th Cir. 2003). To allow a jury to make a finding as to the relevant market, a plaintiff “must provide the Court with expert testimony on this highly technical economic question.” *Cogan v. Harford Memorial Hosp.*, 843 F. Supp. 1013, 1020 (D. Md. 1994). Lee’s wholly qualitative opinions about the delineated-for-litigation product markets should be excluded because they are rife with methodological error, make no sense, yield absurd results, and therefore will not assist the jury.

To begin with, there is no such thing as an ad tech tool that exclusively transacts “open-web display ads.” Ad tech tools—including Google’s ad tech tools—transact all sorts of ads, to be placed in all sorts of places. And so, Lee’s markets include ad tech tools with the ability to

¹ All references to “Ex.” refer to the Declaration of Bryon Becker in Support of Google’s Motion for Summary Judgment and Motions to Exclude. With respect to quoted material, unless otherwise indicated, all brackets, ellipses, footnote call numbers, internal quotations, and citations have been omitted for readability. All emphasis is added unless otherwise indicated.

transact many types of advertising, in addition to “open-web display ads.” Other ad tech tools exist that do not transact “open-web display ads,” but transact ads appearing on what Lee refers to as the “closed web,” and transact native ads, in-app ads, and instream video ads. Lee claims these ad formats are distinct from “open-web display ads” and excludes these other ad tech tools from his proposed markets. Doing so makes no sense. First, Lee’s exclusion of ads on the “closed web” leads to the exclusion of competitors in the ad tech space, like Meta and Amazon, which offer the same types of ad tech tools as Google and are some of the world’s largest display advertising sellers. Next, his exclusion of ads that do not appear on the “web” leads to the exclusion of ads appearing in mobile apps and on smart TVs, even though the technology for buying and selling ads on the web, in apps, and on smart TVs is the same. Lee’s market definitions lead to absurd results—he would include in his market an ad placed on an article on washingtonpost.com, but would exclude the very same ad from the very same advertiser placed on the very same article by the very same tool when viewed by the very same user in *The Washington Post* mobile app.

Lee defines markets for ad tech tools that are capable of facilitating “open-web display ads” yet ignores the many other functions of which those tools are capable. This is like defining a market for Swiss Army knives, selectively ignoring all Swiss Army knife functionality other than the ability to remove a cork, and then excluding from the market any Swiss Army knives that do not include a corkscrew—even though they share other functionality. This is the kind of fictional line-drawing that antitrust law prohibits. *It’s My Party, Inc. v. Live Nation, Inc. (It’s My Party II)*, 811 F.3d 676, 683 (4th Cir. 2016) (“No party can expect to gerrymander its way to an antitrust victory without due regard for market realities”).

Lee then makes additional errors that infect his market share calculations. His calculations focus only on “open-web display ad” impressions transacted, and therefore do not accurately

reflect each tool’s share of the market based on all tool functionality. This is like measuring a manufacturer’s share of the Swiss Army knife market by first excluding all Swiss Army knives from the market that do not include corkscrews, and then—for the Swiss Army knives remaining in the market—looking only to how many times each Swiss Army knife is used to remove a cork.

Deepening the gerrymandered nature of Lee’s market definition opinions, he opines that a worldwide market is the most appropriate geographic market. But none of his reasons for expanding the market beyond the United States—in this case brought by the U.S. Government on behalf of eight Federal Agency Advertisers (“FAAs”), and by 17 U.S. states—are based on relevant considerations or even a reliable application of his own methodology.

At every level, Lee contorted his market definition and market share opinions to avoid analyzing demand for ad tech tools as a whole. By resting upon serious foundational and methodological errors, his opinions fail to satisfy Federal Rule of Evidence 702, and must be excluded.

BACKGROUND

Plaintiffs retained Lee as an expert economist to opine as to whether Plaintiffs’ alleged markets—publisher ad servers, ad exchanges, and advertiser ad networks for “open-web display advertising,” both worldwide and in the United States—are relevant antitrust markets, and whether Google has possessed market power in those markets. Ex. 1, ¶ 7.

1. Open-Web Display Ads.

Plaintiffs have alleged markets for “Publisher ad servers for open web display advertising,” First Am. Compl., ECF No. 120 (“FAC”) ¶ 282, “ad exchanges for indirect open web display advertising,” *id.* ¶ 290, and “Advertiser ad networks for open web display advertising,” *id.* ¶ 297.

According to Lee, “open-web display ads” are “display ads” (using his narrow definition, detailed below) appearing on websites operated by what he calls “open-web publishers.” Ex. 1, ¶ 56.

First, Lee opines that ad types can be distinguished based on where they are shown. Ex. 1, ¶ 50. He says: “Web advertising refers to digital ads shown on websites, viewed on both desktop and mobile devices,” *id.*, and then carves out certain types of websites by distinguishing “open-web” publishers from “closed-web” publishers. *Id.* ¶ 55. Lee’s categorization of website publishers as “open” or “closed” does not depend on whether they erect a paywall or require a password to enter their websites; it is based on the type of ad tech tools publishers use: “I will use the term open-web publishers to refer to those publishers that rely on third-party ad tech products (i.e., products that these publishers do not themselves own) to sell their display ad inventory.” *Id.* (Inventory refers to space where ads can be placed.) Under Lee’s definition, a website publisher like Amazon, which historically used third-party ad tech products, Ex. 83 at 41:7-13, was converted from an “open-web” publisher to a “closed-web” publisher when it started using its own ad tech tools. Ex. 1, ¶ 55 (describing Amazon as a closed-web publisher because it sells its “owned and operated (O&O) display ad inventory to advertisers *through [its] own integrated, internally supplied ad tech tools*”). And a website publisher like *The New York Times*, which historically used an in-house ad server, was converted from a “closed-web” publisher to an “open-web” publisher when it started using Google’s ad server. Ex. 51 at 141:8-22; *see* Ex. 1, ¶ 55. Based on Plaintiffs’ market definitions, the same websites at different times would be treated differently.

Google business documents identify Meta as number one in display ads and Amazon as having growing shares and being an “existential threat.”² Ad tech industry participants—including

² Ex. 84 at -947 (2018: “Facebook has become the dominant player Google has been in second place since 2014, and the gap is expected to continue to widen”); Ex. 85 at 160 (describing Amazon as an “existential threat”).

Meta—agree that Meta competes with Google as well as other ad tech tools that enable advertisers to buy ads on the “open-web.” Ex. 86 at 8 (Meta stating in SEC filing: “We compete with . . . companies that sell advertising to businesses looking to reach consumers and/or develop tools and systems for managing and optimizing advertising campaigns.”).³ But Lee’s exclusion of “closed-web” publishers means Meta and Amazon—some of Google’s biggest competitors in ad tech—are not in the market.

Lee’s restriction of his markets to ad tech tools that facilitate ads appearing on the web further excludes all ads appearing in mobile apps. According to Lee, a display ad appearing on the web on a mobile phone is a different “type” of ad than the same exact ad from the same exact advertiser if it appears in an app on the same mobile phone. This would be the case even if the ad appears on a website and app operated by the same content publisher—i.e., according to Lee, if Coca-Cola places an ad with *The Washington Post*, the ad that appears on *The Washington Post* website when viewed on a mobile phone is a different “type” of ad than the same ad viewed on *The Washington Post* app on the same mobile phone.

Second, Lee further narrows the relevant markets by creating an artificially narrow definition of “display ads.” He defines “display ads” as “image or text-based advertisements (ads) that internet users see online,” which “may include items such as text, images, video, audio, and often come in a set of predetermined formats and sizes.” Ex. 1, ¶ 49(1). Lee distinguishes display ads from native ads, which he describes as coming in three forms, all of which (like “display ads”) include images and text: (A) content recommendation ads, which are “collections of links that suggest additional external content for users”; (B) sponsored product or listing ads, which

³ Ex. 26 at 22 (ad tech provider Criteo describing competition with Amazon, Meta, Google, and others); Ex. 87 at 27 (Microsoft document showing Facebook with [REDACTED] of total 2020 U.S. display ad revenue and Google with [REDACTED] in 2020).

“promote specific products alongside ‘organic’ product listings on e-commerce sites,” like amazon.com; and (C) social media ads, which “appear in social media feeds and closely resemble organic posts on” websites like facebook.com, instagram.com, and twitter.com. *Id.* ¶ 49(4) & Figs. 9-12. Although he includes outstream video ads—which he describes as a “video that is part of a banner ad at the top of a website”—in his definition of display ads, he excludes instream video ads, which are ads “shown within a video player on a website.” *Id.* ¶¶ 49(1) & n.10, 49(3). Based on Lee’s definitions, display ads, native ads, and instream video ads can all appear on websites—but only display ads fall within his claimed markets. *Id.* ¶¶ 49(1), 49(3), 49(4).

In sum, Lee excludes from his definition of “open-web display ads,” and his claimed markets for tools with the ability to transact those ads: (1) ads that do not appear on the “open” web, i.e., ads that appear on the website of any publisher who uses its own ad tech tools; (2) ads that do not appear on a website, for example, ads that appear in an app or on a smart TV streaming service, like Disney+ or Apple TV (referred to as “connected TV” or “CTV”), even if the app or smart TV streaming service is owned and operated by a content publisher that also has a website (e.g., an ad shown on disney.com would be in the market, but the same ad shown to the same user on Disney’s streaming app or mobile app would be out); and (3) certain ad formats even when shown on “open-web” websites. Ex. 1, ¶¶ 12(1), 56.

Lee agrees that the term “open-web display advertising” is not one that he had heard prior to this case, Ex. 8 at 34:6-10, or that he recalls seeing in any Google or third-party documents reporting market shares. *Id.* at 42:14-43:9, 47:9-15. Likewise, there is no evidence in this case of any advertiser—including the FAA Plaintiffs—ever using the term “open-web display advertising” before this lawsuit. Ex. 12 at 193:18-194:5; Ex. 16 at 259:19-261:2; Ex. 17 at 208:3-208:13; Ex. 18 at 269:8-270:3; Ex. 19 at 220:5-8; Ex. 20 at 206:24-207:20; Ex. 21 at 70:9-72:4;

Ex. 22 at 278:15-20; Ex. 23 at 47:8-22. Nor has any advertiser testified that it only buys “open-web display ads.” To the contrary, advertisers typically buy many types of ads from “open-web” and “closed-web” publishers alike, and shift spend between them. Ex. 12 at 100:14-102:19; Ex. 13 at 28:24-29:24, 32:6-34:12; Ex. 14 at -737; Ex. 15 at 382:6-12; Ex. 64 at 78:21-79:7; Ex. 88; *see also* Ex. 3, ¶ 113 (Lee does “not dispute that many advertisers use multiple forms of digital advertising, or that advertisers can substitute across channels,” at least “on the margin”).

As recognized by Plaintiffs’ other expert economist, Rosa Abrantes-Metz, the term “open-web display advertising” “is simply a name – a name that was given to the relevant antitrust market delineated for this case.” Ex. 6 at 26:22-28:5. Plaintiffs’ expert Dr. Ravi, who has expertise in digital advertising, testified that he was familiar with the term “open-web display advertising,” but then defined the term as having to do with whether an auction for an ad impression was an open auction or a closed private auction—which has nothing to do with Lee’s markets. Ex. 32 at 62:2-63:23. In other words, “open-web display advertising” as defined by Plaintiffs is not a term (or a market) that exists in the real world.

2. Ad Tech Tools for Which Lee Defines Product Markets.

Lee agrees that each of the tools he analyzed—including Google’s publisher ad server, DFP; its ad exchange, AdX; and its advertiser ad network, Google Ads—has the ability to serve and transact multiple types of digital ads in addition to “open-web display ads,” and can transact ads both directly (without the use of a real-time auction) and indirectly. He did not identify a single tool that transacts only “open-web display ads.”

Publisher ad servers: Lee defines a market for publisher ad servers, which he describes as “software products” that are “used by publishers to facilitate the management and sale of” digital ads. Ex. 1, ¶ 85 n.76. Lee acknowledges that publisher ad servers—including Google’s—have

the ability to serve and transact both display ads and “non-display (e.g., instream video)” ads, and can transact ads that appear on websites as well as ads that appear in apps. *Id.*⁴ He also acknowledges that publisher ad servers can transact both direct deals negotiated directly between a specific publisher and advertiser, and indirect deals involving third-party ad tech. Ex. 1, ¶¶ 65, 66, 85. He acknowledges that some of Google’s publisher ad server competitors who can serve “open-web display ads” have chosen to “focus on non-display advertising.” *Id.* ¶ 445 n.635.

Ad exchanges: Lee defines a market for ad exchanges, which he says “are software products that run real-time auctions for publishers’ display ad inventory.” Ex. 1, ¶¶ 103, 104. Lee agrees that ad exchanges “can transact other forms of digital advertising than open-web display.” Ex. 8 at 98:19-99:8. For example, ad exchanges (like Google’s AdX) can facilitate the sale of in-app ads and connected TV ads. *Id.* at 53:7-12, 99:12-20, 101:17-102:1. Lee also testified that AdX “can transact display inventory from Google’s owned and operated properties,” meaning that AdX can transact “closed-web” display ads. *Id.* at 98:19-99:11. Lee could not name a single exchange that “does not transact other forms of digital advertising than open-web display.” *Id.* at 105:1-7.

Lee describes direct transactions as “those that are subject to terms individually and ‘directly’ negotiated between publishers and advertisers,” Ex. 1, ¶ 65, and indirect transactions as those that “allow open-web publishers to sell remaining (‘remnant’) ad space on a page not allocated to direct deals to advertisers using ad tech products,” *id.* ¶ 66. Lee acknowledges that ad

⁴ Ex. 1, ¶ 315 n.452 (“Publisher ad servers can also serve ads other than web display ads.”); *see also* Ex. 8 at 89:11-90:2 (stating with respect to publisher ad servers: “Some of those products, including, as you noted, DFP, can transact other forms of digital advertising”); *id.* at 93:4-94:1 (“DFP is an example of a publisher ad server that is in the relevant product market comprising publisher ad servers, and it can facilitate the sale of other types of digital advertising.”); *id.* at 94:15-95:1 (“DFP, for example, can serve both web display and app display, to my understanding”).

exchanges can facilitate direct transactions, *id.* ¶¶ 103 n.115, 335 n.487,⁵ but he excludes direct transactions from his ad exchange market, *e.g.*, *id.* ¶ 335 n.487, Figs. 47-51.

Advertiser ad networks: Lee defines a market for “advertiser ad networks,” which he says are “products that advertisers use to purchase display ad inventory from publishers.” Ex. 1, ¶ 97. Lee claims that Google Ads is Google’s “advertiser ad network.”⁶ *Id.* ¶ 122. He acknowledges that an advertiser using Google Ads can buy display ads appearing on websites of “open-web” publishers as well as video ads and ads appearing in apps. *Id.* ¶¶ 122, 123.

Lee also agrees that what he refers to as “advertiser ad networks” can transact ads on what he defines as the “closed web,” i.e., on websites of publishers including Google and Facebook who sell “owned and operated (O&O) display ad inventory to advertisers through their own integrated, internally supplied ad tech tools” *Id.* ¶¶ 55, 422 (Google Ads enables advertisers to buy ads on Google’s O&O properties, including Google Search and YouTube); Ex. 8 at 111:5-12 (Facebook Audience Network enables advertisers to “purchase owned and operated Facebook inventory”). Lee could not “definitively say that” advertisers “do not care about other types of digital advertising through Google Ads” other than “open-web display ads.” Ex. 8 at 125:4-20.

3. Lee’s Gerrymandered Product Markets.

In his summary of opinions, Lee defined his product markets for tools specific to “open-web display advertising.” *E.g.*, Ex. 1, ¶ 7 (citing FAC ¶¶ 279-303); *id.* ¶¶ 12(1), 20, 24, 27, 169; Ex. 3, ¶¶ 228, 262. Lee confirmed this market is comprised of ad tech with the ability to transact “open-web display advertising.” Ex. 8 at 106:8-107:2. Lee repeatedly conceded that ad tech tools

⁵ See also Ex. 3, ¶ 234 & n.382 (naming “Index Exchange, Verizon, Magnite, and Equativ” as ad exchanges that can “serve programmatic direct deals”).

⁶ Google disputes that an “advertiser ad network” is a type of ad tech tool, and disagrees that Google Ads is an “advertiser ad network.” It is not necessary for the Court to resolve this dispute in order to decide this motion in Google’s favor.

do not exclusively serve “open-web display advertising,” *e.g.*, *id.* at 89:11-90:2, 94:15-95:1, 99:12-20, 101:17-102:1, 124:2-125:3, and so he explained that he defined his market to include tools that can be used to transact “open-web display ads,” *id.* 89:11-90:2. He acknowledged these tools also can be used to transact other ad formats, like in-app ads, native ads on social media and retail sites, and instream video ads, including those appearing on connected TV. *Id.* at 53:7-54:4, 89:11-90:2. Lee admits he is unaware of any ad exchanges that facilitate advertising only for “open-web display advertising.” *Id.* at 104:17-105:7. But Lee excludes from his markets any products—publisher ad servers, ad exchanges, and advertiser ad networks—that transact those other formats if they cannot also be used to transact “open-web display ads.” *Id.* at 92:17-94:14; Ex. 3, ¶ 103.

Accordingly, although Lee claims now to define relevant product markets for “advertiser ad networks, ad exchanges, and publisher ad servers,” he excludes any such tools, for example, that (1) only transact native ads, Ex. 3, ¶ 298, (2) are only used to serve display ads on apps or on connected TV, Ex. 8 at 97:2-15, 115:21-116:21, or (3) are used by publishers to sell owned and operated display ad inventory, Ex. 1, ¶ 55, like the tools provided by Meta, TikTok, Amazon, Pinterest, or Snapchat, *e.g.*, Ex. 3, ¶ 222.

In analyzing how and whether publishers and advertisers value an ad exchange based on its ability to transact “open-web display ads” or other types of advertising, Lee admits he does not know what advertisers and publishers take into account for such decisions. Ex. 8 at 122:9-123:21.

4. Lee’s Geographic Markets.

Lee offers two different geographic markets: a “broad” worldwide market and a “narrow” United States market. Ex. 8 at 275:16-22. Lee defines his geographic markets “based on the locations of customers (buyers or sellers of open-web display advertising).” Ex. 1, ¶ 387. Although Plaintiffs—the United States and 17 Attorneys General—pled a United States market,

with a worldwide market in the alternative, Lee insists his “broad” worldwide market is necessary for a “complete picture.” Ex. 3, ¶ 346. Lee claims a worldwide market is useful for a number of reasons, including that customers are located globally and supply-side competition among ad tech providers is global. *Id.* ¶ 343.

Lee is unaware of any data suggesting the FAAs purchased any ad inventory outside the United States. Ex. 8 at 284:10-15. Similarly, he acknowledges that competitive dynamics vary across the globe. Ex. 1, ¶ 389; Ex. 8 at 282:16-284:8.

5. Lee’s Market Share Calculations.

Lee agrees that his market definitions include ad tech tools that can be used to sell forms of advertising in addition to “open-web display ads.” Ex. 3, ¶ 140. “For the purposes of computing market shares,” however, he “restrict[s] attention to open-web display transactions,” under the guise of “illuminating” “the extent to which Google possesses market power over different sets of ad tech products.” *Id.* Rather than measuring each tool’s share of the relevant market by looking at all of the impressions it transacts—including “open-web display ad” impressions, native impressions, outstream video impressions, in-app impressions, connected TV impressions, and impressions on the ad tech provider’s O&O properties—Lee looks only at “open-web display ad” impressions. Ex. 1, ¶¶ 30 n.5, 490, 491, 493, 531, Figs. 45, 47, 49, 50, 56, 57, 73, 74, 90, 93, 95, 96, 99-102, 105-107, 119, 121-135; Ex. 3, ¶ 140, Figs. 69-72. He therefore ignores the total number of impressions transacted when analyzing each tool’s share of the market.

And for the ad exchange market, Lee looks at an even more limited set of transactions—he considers “indirect open-web display transactions to be the relevant set of transactions for the ad exchange market,” and “exclude[s] direct deals such as Programmatic Guaranteed and Preferred Deals.” Ex. 1, ¶ 335 n.487. As just one example, he calculates AdX’s share of the market for ad

exchanges by looking only at its “share of worldwide indirect open-web display impressions transacted through ad exchanges.” *Id.* Fig. 47.

ARGUMENT

Expert testimony is admissible only if the expert’s “scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue,” and the expert’s testimony (1) “is based on sufficient facts or data,” (2) “is the product of reliable principles and methods,” and (3) “reflects a reliable application of the principles and methods to the facts of the case.” Fed. R. Evid. 702. Because expert testimony “can be both powerful and quite misleading,” the judge must also weigh “possible prejudice against probative force under” Federal Rule of Evidence 403, and exercise “more control over experts than over lay witnesses.” *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 595 (1993).

The trial court’s duty is to play “a gatekeeping role” in deciding whether to admit expert testimony: “the trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.” *Id.* at 589, 597. As of December 2023, Federal Rule 702 was amended to require courts to take a more active role in analyzing experts’ conclusions and ensure they are the result of “reliable application of the expert’s basis and methodology.” Fed. R. Evid. 702 advisory committee’s note to 2023 amendments. The changes “respond to the fact that many courts have declared the requirements set forth in Rule 702(b) and (d) . . . are questions of weight and not admissibility, and more broadly that expert testimony is presumed to be admissible,” and “the language of the amendment more clearly empowers the court to pass judgment on the conclusion that the expert has drawn from the methodology.” Report of the Advisory Committee on Evidence Rules, at 6-7 (May 15, 2022), [tinyurl.com/AdvisoryCommitteeRpt](https://www.tinyurl.com/AdvisoryCommitteeRpt). The party

offering the expert bears the burden of establishing that Rule 702 is satisfied. *Daubert*, 509 U.S. at 592 & n.10.

“District courts have broad discretion when exercising their gatekeeping function.” *It’s My Party, Inc. v. Live Nation, Inc. (It’s My Party I)*, 88 F. Supp. 3d 475, 483 (D. Md. 2015), *aff’d*, 811 F.3d 676 (4th Cir. 2016). An economics expert’s opinions relating to market definition and market share are inadmissible if they are “not based on sound logic or reasoning.” *Id.* at 485-88 (excluding economics expert’s opinion narrowly defining the market on the basis that it was not “the product of reliable principles and methods”). Even if expert testimony is “based on sound methodology,” it “should be excluded if it is based on unsound or incorrect assumptions.” *Id.* at 483 (citing *Tyger Const. Co. v. Pensacola Const. Co.*, 29 F.3d 137, 142 (4th Cir. 1994)).

Similarly, expert opinions that are “contrary to law” are inadmissible.⁷

I. LEE’S METHODOLOGY FOR DEFINING THE RELEVANT MARKETS IS UNRELIABLE AND CONTRARY TO LAW.

A relevant product market must include all products “reasonably interchangeable by consumers for the same purposes.” *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 395 (1956). In evaluating what products are reasonably interchangeable, courts consider the “extent to which consumers will change their consumption of one product in response to a price change in another, i.e., the ‘cross-elasticity of demand.’” *It’s My Party II*, 811 F.3d at 683. It is a “fundamental tenet of antitrust law that the relevant market definition must encompass the

⁷ *In re Payment Card Interchange Fee & Merchant Discount Antitrust Litig.*, 2022 WL 15053250, at *23 (E.D.N.Y. Oct. 26, 2022) (opinions contrary to law are not helpful to the fact finder); *Fed. Hous. Fin. Agency v. Nomura Holding Am., Inc.*, 2015 WL 640875, at *3 (S.D.N.Y. Feb. 16, 2015) (same); *United Food & Com. Workers Loc. 1776 & Participating Emps. Health & Welfare Fund v. Teikoku Pharma USA*, 296 F. Supp. 3d 1142, 1183 (N.D. Cal. 2017) (“exclusion of opinions that are . . . contrary to the law is appropriate through the *Daubert* process”); *Loeffel Steel Prods., Inc. v. Delta Brands, Inc.*, 387 F. Supp. 2d 794, 806 (N.D. Ill. 2005) (“Expert opinions that are contrary to law are inadmissible.”).

realities of competition.” *Oksanen v. Page Memorial Hosp.*, 945 F.2d 696, 709 (4th Cir. 1991) (en banc); *Ohio v. Am. Express Co.*, 585 U.S. 529, 543-44 (2018) (an antitrust market must be based on “commercial realities”). An economics expert cannot “gerrymander its way to an antitrust victory without due regard for market realities.” *It’s My Party II*, 811 F.3d at 683 (affirming district court’s exclusion of expert analysis defining “sweeping national promotion market and a cramped amphitheater-only venue market—that coincidentally fit plaintiff’s precise circumstances”).

A. There Is No Such Thing as a Market for Ad Tech Tools for “Open-Web Display Advertising.”

Courts are skeptical of parties’ attempts to “gerrymander” market definitions that just so happen to “coincidentally fit” plaintiffs’ litigation needs. *See It’s My Party II*, 811 F.3d at 683. That is exactly what happened here: Lee made up an entire category of advertising that is divorced from market realities, and he did it in order to fit Plaintiffs’ strategic goals. Further, rather than using the standard of reasonable substitutes used by the courts, Lee applied a standard of “close substitutes” to exclude obvious substitutes. Ex. 8 at 62:10-63:5.⁸

Markets for tools for “open-web display advertising” are divorced from commercial realities. “Open-web display advertising” is a term that does not exist in the real world, but was instead made up for the purpose of this antitrust case. Ex. 6 at 26:22-28:5 (“open-web display advertising” is just a “name that was given to the relevant antitrust market delineated for this

⁸ In the only case in which Lee has testified within the last ten years, Lee was criticized for his lack of methodological rigor. *FTC v. Microsoft Corp.*, 681 F. Supp. 3d 1069 (N.D. Cal. 2023). There, like here, Lee attempted to gerrymander a market by excluding a reasonably interchangeable substitute on the basis that it had differentiated product features. *Id.* (acknowledging “there are content differences between the [Nintendo] Switch and Playstation,” but stating “It doesn’t matter whether [Nintendo’s] products are fully interchangeable with those of its competitors because perfect fungibility isn’t required”).

case”). Lee had not heard the term “open-web display advertising” before this case, Ex. 8 at 34:6-10; nor had any advertiser who testified during discovery, *see cites supra* at 6-7. Plaintiffs’ expert Dr. Ravi understood based on his expertise in digital advertising that the term refers to whether an auction was an open auction or a closed private auction—which has nothing to do with Lee’s markets. Ex. 32 at 62:2-63:23.

There are no ad tech tools that only transact “open-web display ads”—Lee concedes that the tools he includes in each of his markets do more than that. *Supra* at 7-9. Lee’s markets, defined by the ability to transact “open-web display ads,” exclude obvious substitutes that enable advertisers to buy ads that can be bought using the very same tools that Lee includes in the market. As a result, Lee has not done the required analysis of products, and demand for those products, based on their full feature set. *Virginia Vermiculite, Ltd. v. W.R. Grace & Co. Conn.*, 108 F. Supp. 2d 549, 586-87 (W.D. Va. 2000) (vermiculite was not a product market where there were substitutes for vermiculite for a variety of its most common uses; these substitutes should be included in the market even where they did “not cover all of the potential end uses” of vermiculite). Lee’s market definition opinions should therefore be excluded. *See Its My Party II*, 811 F.3d at 683; *see also Hicks v. PGA Tour, Inc.*, 897 F.3d 1109, 1121 (9th Cir. 2018) (rejecting market definition that the plaintiffs “contorted to meet their litigation needs”); *Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039, 1056-57 (8th Cir. 2000) (opinion of antitrust plaintiff’s expert “should not have been admitted because” it “ignored inconvenient evidence” and “did not incorporate all aspects of the economic reality” of the applicable market).

Defining “open-web display ads” as Lee does also leads to absurd results. First, he identifies “open-web publishers” by reference to the ad tech tools they use. This means that a website publisher like Amazon, which previously used third-party ad tech tools, Ex. 83 at 41:7-

13, was converted from an “open-web” publisher to a “closed-web” publisher when it started using its own ad tech tools. *See* Ex. 1, ¶ 55. And a website publisher like *The New York Times*, which historically used an in-house ad server, was converted from a “closed-web” publisher to an “open-web” publisher when it started using Google’s ad server. Ex. 51 at 141:8-22; *see* Ex. 1, ¶ 55. Further, the “open-web publisher” examples Lee provides—*USA Today*, Weather.com, and Vox, Ex. 1, ¶ 55—are only “open-web publishers” when they sell ad space on their websites; when they sell ad space in their apps, they are not. Lee’s definition also excludes native ads, which, like “display ads” as Lee defines them, are made up of text and images and can appear on websites or in apps; and excludes instream video ads, even though “display ads” can include video.

Lee’s made-up definition also excludes from the market some of Google’s biggest competitors, including Amazon and Meta, on the basis that they—like Google—sell their O&O ad inventory through integrated, internally supplied ad tech tools. This is inconsistent with the realities of the market. Meta has a much larger share of display ad spend than Google and Amazon’s share has been increasing as Google’s has been decreasing, *supra* note 2, and Plaintiffs’ own expert testified that “Meta competes with sellers of open web display advertising,” Ex. 7 at 249:15-20. Despite his exclusion of major competitors on the basis that they use their own ad tech tools to sell ads on their O&O properties, Lee acknowledges that Google Ads is used to buy ads on Google’s O&O properties, and opines that Google’s “O&O properties are an important source of Google’s market power in ad tech because they serve to draw advertisers into using Google’s ad tech products.” Ex. 1, ¶ 422.

B. Lee’s Hypothetical Monopolist Test Is Unsupported by the Record.

Compounding that these are gerrymandered markets is the fact that Lee’s methodology for determining the relevant markets is contrary to the law and unreliable. Defining a relevant product market requires evaluating the “extent to which consumers will change their consumption of one

product in response to a price change in another, i.e., the ‘cross-elasticity of demand.’” *It’s My Party II*, 811 F.3d at 683. This “is the ultimate determinative factor for relevant product market definition.” *In re Zetia (Ezetimibe) Antitrust Litig.*, 587 F. Supp. 3d 356, 363 (E.D. Va. 2022). While Lee acknowledges this fundamental principle, Ex. 1, ¶ 247, he fails to conduct the “determinative” cross-elasticity of demand analysis.

Lee claims to employ the Hypothetical Monopolist Test (“HMT”) to support his market definitions. Ex. 1, ¶ 248; Ex. 8 at 61:2-17. The HMT evaluates whether a hypothetical monopolist could profitably impose a small but significant and nontransitory increase in price (“SSNIP”)—i.e., whether enough customers would respond to the SSNIP by choosing to purchase an alternative product, thereby causing the price increase to be unprofitable. 2010 Merger Guidelines § 4.1.1; *Apple v. Epic*, 67 F.4th 946, 975 (9th Cir. 2023). The HMT is a “quantitative” approach to defining a relevant product market. *Teradata Corp. v. SAP SE*, 570 F. Supp. 3d 810, 838-41 (N.D. Cal. 2021); *Apple*, 67 F.4th at 975 (“inquiry involves empirical evidence in the form of a ‘SSNIP’ analysis,” which “uses past consumer-demand data and/or consumer-survey responses”).

Lee claims that “implementing the HMT does not require independent ‘quantitative estimates of substitution.’” Ex. 3, ¶ 58 n.104. He declines to perform a SSNIP analysis or any empirical analysis measuring customer substitution patterns in response to a price increase. *See Teradata*, 570 F. Supp. 3d at 838-41 (excluding expert whose purported HMT did not use data that measured “customer responses to changes in price” and therefore did not “measure the most fundamental principle in defining a market: cross-elasticity of demand”).

1. Lee’s Failure to Conduct a Quantitative Analysis Requires Exclusion of His Market Definition.

Eschewing any empirical analysis of cross-price elasticity of demand, Lee primarily bases his opinion on “qualitative” evidence—i.e., “product characteristics and customer behavior.”

Ex. 1, ¶ 253. Essentially, Lee analyzes a subset of the *Brown Shoe* practical indicia. *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962).⁹ But as the Sixth Circuit held in *Kentucky Speedway*, “these practical indicia come into play only after the outer boundaries of a product market are determined by evaluating the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it.” *Ky. Speedway, LLC v. Nat’l Ass’n of Stock Car Auto Racing, Inc.*, 588 F.3d 908, 918 (6th Cir. 2009). There, the Sixth Circuit affirmed the exclusion of plaintiffs’ expert who failed to conduct a proper SSNIP test and instead “primarily relied on the ‘practical indicia’ factors laid out in *Brown Shoe*.” *Id.* at 918-19. Other courts have likewise rejected expert testimony and/or evidence solely based on *Brown Shoe* factors. *See, e.g., Reifert v. S. Cent. Wisconsin MLS Corp.*, 450 F.3d 312, 319-20 (7th Cir. 2006) (a plaintiff must “provide an economic analysis of the relevant market” as the “practical indicia named in *Brown Shoe*” were “never intended to exclude economic analysis altogether,” including “cross-price elasticity of demand”); *U.S. Horticultural Supply v. Scotts Co.*, 367 F. App’x 305, 311 (3d Cir. 2010) (rejecting plaintiff’s expert report that failed to “include specific information relating to price increases or price stability for substitute products in relation to a rise in the price” in defendant’s product because failure to present this evidence could not “be overcome by the ‘practical indicia’ evidence offered by” plaintiff); *Teradata*, 570 F. Supp. 3d at 834-35 (focus on practical indicia inappropriate when not defining a submarket).

Qualitative evidence cannot supplant the “ultimate determinative factor” of market definition: cross-price elasticity of demand. *In re Zetia (Ezetimibe) Antitrust Litig.*, 587 F. Supp.

⁹ The Supreme Court in *Brown Shoe* identified seven factors that may be used to identify the boundaries of a “submarket”: “[1] industry or public recognition of the submarket as a separate economic entity, [2] the product’s peculiar characteristics and uses, [3] unique production facilities, [4] distinct customers, [5] distinct prices, [6] sensitivity to price changes, and [7] specialized vendors.” 370 U.S. at 325.

3d at 363; *It's My Party II*, 811 F.3d at 683. That is particularly true here, where Plaintiffs' economist admits that he does not know what advertisers and publishers take into account when making decisions among ad tech tools that offer "open-web display advertising" as well as other advertising. Ex. 8 at 122:8-123:21.

Even if *Brown Shoe* practical indicia could satisfy an HMT, Lee employs them unreliably (to the extent he does so at all). Lee, who does not even reference *Brown Shoe*, offers (at most) a cherry-picked analysis of a select few indicia. That is insufficient. *See Teradata*, 570 F. Supp. 3d at 835 n.4 (requiring the existence of "three or four of these practical indicia"). Further, applying *Brown Shoe* does not support Lee's market definition. Applying those factors actually demonstrates why Lee's market definition opinions are unsound. For example, as noted above, there is no industry recognition of markets for "open-web display advertising" tools, nor are there tools exclusively designed for "open-web display advertising." Moreover, the key factor in Lee's HMT rests on a qualitative analysis comparing "open-web display advertising" (and tools for transacting it) to other forms of digital advertising to determine whether they are distinct and valuable. Ex. 8 at 61:2-17. Basing market definition on differences in product characteristics would make non-commodity products their own market and result in countless single product markets. *Cf. In re Am. Express Anti-Steering Rules Antitrust Litig.*, 361 F. Supp. 3d 324, 343 (E.D.N.Y. 2019) ("It is an understatement to say that single-brand markets are disfavored.").

2. Lee Fails to Perform Any Quantitative Analysis Constituting an HMT.

To the extent Lee could claim to rely on anything quantitative, the evidence he points to does not actually satisfy the HMT because it does not measure the effect of a price increase on customer substitution patterns. *See* Ex. 3, ¶ 58 n.104. For example, Lee points to a series of charts analyzing advertiser multihoming between Google Ads, and Google's other buying tool, DV360 (which Lee claims is in a separate market). Ex. 1, Figs. 34-38. Those charts contain no analysis

or data on how advertisers who use Google Ads would respond to a price increase and actually show that advertisers commonly use more than one tool at the same time.

The only other “quantitative” evidence Lee points to is what he characterizes as “direct evidence.” To the extent Lee points to “direct evidence” of Google’s alleged “anticompetitive conduct” to define his markets, that is improper. *Ky. Speedway*, 588 F.3d at 919 (rejecting plaintiff expert’s reliance on “anticompetitive conduct as additional indicia to define the relevant markets”).

Lee’s other two categories of “direct” evidence, namely the AdX take rate and Google’s internal simulations, likewise do not satisfy the HMT. Ex. 3, ¶ 58 n.104.¹⁰

For the first category, Lee claims that AdX’s average take rate is higher than the weighted average of its competitors and has remained stable for a number of years. Ex. 1, ¶ 350, 508 n.739. *But see id.* Fig. 110 (table showing AdX does not have the highest take rate). That type of analysis does not satisfy the HMT, because it does not analyze customer responses to a change in price. *Ky. Speedway*, 588 F.3d at 918-19 (affirming exclusion of market definition opinion where expert, rather “than analyzing whether a price increase at a particular point in time would result in consumer substitution of an alternative product,” merely “looked at average . . . ticket prices and attendance figures over an eight-year span and concluded that both price and demand increased in this time period”). In addition, Lee over and over says that for purposes of market definition, it is necessary to use quality adjusted prices, a correct statement because a firm may charge higher prices for higher quality. *E.g.*, Ex. 1, ¶ 248 & n.335; *id.* §§ IV.C.3, IV.D.3, IV.E.3. But Lee’s average price analyses compare take rate percentages, with no analysis of product quality.

¹⁰ Lee also references analysis he did on the effect removing Google Ads as a buying tool would have on publisher payouts. Ex. 1, § V.D.3. But again, that analysis does not measure customer responses to change in price—the “most fundamental principle” for market definition and the application of the HMT. *Teradata*, 570 F. Supp. 3d at 840.

For the second category, Lee points to internal Google simulations indicating Google could potentially increase prices for AdX and Google Ads. Ex. 1, §§ V.C.3.a, V.D.3.a. These internal company simulations were not designed to implement an HMT; they amount to nothing more than non-expert “armchair economics” that lack the economic rigor necessary to satisfy the hypothetical monopolist test. *See Menasha Corp. v. News Am. Marketing In-Store, Inc.*, 354 F.3d 661, 664 (7th Cir. 2004). These simulations do not actually address the basic premise of the hypothetical monopolist test. The AdX simulations do not even evaluate a potential price increase for AdX. Ex. 1, § V.C.3.a. The Google Ads simulations are likewise inapposite. The HMT requires analyzing whether “the only present and future seller” of a product could profitably impose a SSNIP. 2010 Merger Guidelines § 4.1.1. Lee does not point to any evidence that Google’s simulations tested that hypothetical. And the fact that there is no evidence Google raised prices as discussed in those documents supports the inference that Google could not profitably impose those increases.¹¹

C. Lee’s Worldwide Market Is Irrelevant and Unreliable.

To prevail on their claims, Plaintiffs must also define the relevant geographic market. *Satellite Television v. Continental Cablevision*, 714 F.2d 351, 355 (4th Cir. 1983). The relevant geographic market is “the area in which buyers or sellers of the relevant product effectively compete.” *Consul, Ltd. v. Transco Energy Co.*, 805 F.2d 490, 495 (4th Cir. 1986).

In defining the relevant markets, Lee offers both a “broad” and “narrow” geographic market. Ex. 8 at 275:16-22. Lee opines that a “broad” worldwide geographic market and a “narrow” United States market are both relevant antitrust markets. *Id.* Lee’s “worldwide” market

¹¹ As Dr. Lee’s own analysis shows, other competitors were charging higher prices when Google ran these simulations. Ex. 1, Fig. 111.

should be excluded because it is irrelevant to this case and based on an unreliable application of his chosen methodology.

1. Lee's Worldwide Market is Not Relevant to Plaintiffs' Case.

The United States and Attorneys General for 17 states have sued Google for alleged conduct “in the United States.” FAC ¶ 279. They acknowledge that there are “differences in publisher and advertiser preferences, language, and regulatory frameworks depending on the country.” *Id.* ¶ 280; *see also* 2010 Merger Guidelines § 4.2 (listing factors such as “language, regulation, tariff and non-tariff trade barriers, custom and familiarity, reputation, and service availability” that can affect the scope of geographic markets).

Lee claims that a worldwide market is necessary “to obtain a complete picture of the scope and impact of Google’s conduct.” Ex. 3, ¶ 346. Lee claims a worldwide market is useful for three reasons: (1) customers (open-web publishers and advertisers) are located globally; (2) aspects of supply-side competition among ad tech providers are global; and (3) Google’s conduct is not limited to the United States. Ex. 1, ¶¶ 393-97. Addressing each of these reasons in turn demonstrates why Lee’s “alternative” market is nothing more than a distraction that will obfuscate the core focus of this case.

First, Lee defines his geographic markets “based on the locations of customers (buyers or sellers of open-web display advertising).” Ex. 1, ¶ 387. Here, the Plaintiffs and the focus of the Amended Complaint are United States publishers and advertisers, including FAAs seeking damages. FAC ¶¶ 2, 278. There is no evidence that those FAAs purchased ad inventory outside the United States. Ex. 8 at 284:10-18. Separate from the FAAs, as Lee highlights in his report, “advertiser spending from a region often returns to the sell-side in that region.” Ex. 1, ¶ 394.

Second, the competitive dynamics for “supply-side competition” in the United States vary greatly from other international markets. Ex. 89 at -241 (“[REDACTED] of Xandr’s current sell side revenue

comes from EMEA, where competitive dynamics and customer needs differ meaningfully from the US”); Ex. 90 at -725 (“competitive dynamics vary dramatically across markets”). Lee could not identify any evidence to the contrary. *E.g.*, Ex. 8 at 284:2-8 (“Q. Have you seen any business documents in this case that say the competitive dynamics for ad tech in the United States are comparable to the rest of the world? A. I don’t, sitting here today, recall any such documents.”); Ex. 1, ¶ 389 (“there may be some differences in competitive conditions within narrower geographic regions”). Lee offers no explanation of how different regulatory regimes—including the EU General Data Protection Regulation—impact data collection and usage. 2010 Merger Guidelines § 4.2 (listing “regulation” as a factor that can affect the scope of geographic markets).

Finally, Plaintiffs’ claims are premised on Google’s alleged conduct “in the United States.” FAC ¶ 279; Ex. 1, ¶ 405 (opining the “competitive effects of Google’s conduct are likely to be particularly meaningful within the United States”). Because the competitive conditions vary greatly between the United States and other nations, expanding the geographic market to a worldwide market will mask rather than clarify the competitive conditions in the United States.

Lee’s “alternative” worldwide market should be excluded as irrelevant. Introducing a worldwide market will only serve to confuse the issues and paint a misleading picture of Google’s alleged “market power.”

2. Lee’s Worldwide Geographic Market Definition Is Unreliable Because He Misapplies His Own Methodology.

As Lee acknowledges in his rebuttal report, when the antitrust agencies “rely on market shares and concentration, they usually do so in the smallest relevant market satisfying the hypothetical monopolist test.” Ex. 3, ¶ 326 n.510 (quoting 2010 Merger Guidelines § 4). Case law confirms that the relevant geographic market is the “smallest market” that satisfies the HMT. *E.g.*, *E.I. Du Pont De Nemours & Co. v. Kolon Indus.*, 683 F. Supp. 2d 401, 413 (E.D. Va. 2009)

(DOJ “adopts the ‘smallest market’ principle, meaning that the smallest market in which prices may be raised with relative impunity is considered to be the relevant geographic market”); *Vasquez v. Indiana Univ. Health, Inc.*, 40 F.4th 582, 587 (7th Cir. 2022) (“the appropriate object of the geographic-market analysis is the smallest market a hypothetical monopolist could dominate”).

Lee does not limit his opinion to the “smallest” geographic market; he acknowledges that the global market is “broad” and the United States market is “narrower.” Ex. 8 at 274:16-275:22; *see also* Ex. 1, ¶¶ 392, 402-03. In offering both a narrow and broad geographic market definition opinion, Lee “violates the principle that has been articulated by the Department of Justice and Federal Trade Commission that relevant markets when used for computing market shares should be narrowly defined.” Ex. 3, ¶ 326 n.510.

II. LEE’S MARKET SHARE CALCULATIONS MUST BE EXCLUDED AS INCONSISTENT WITH HIS PROPOSED MARKET DEFINITIONS AND THE LAW.

Lee defined product markets for tools—advertiser ad networks, ad exchanges, and publisher ad servers. Ex. 8 at 44:12-19. He claims these product markets “do not include the underlying display advertisements themselves.” *Id.* at 56:4-58:7; *see also id.* at 64:16-65:15; Ex. 3, ¶ 94. He includes any tool in each of his relevant markets so long as it “can facilitate the sale of open-web display advertising,” acknowledging that the tools he includes “can transact other forms of digital advertising” as well. Ex. 8 at 89:11-90:2. He excludes many ad tech tools with overlapping functionality if they do not facilitate the sale of “open-web display ads.”

Even accepting the markets as Lee defines them, there is a fatal mismatch between the markets he defines and the market shares he calculates. He says that he is measuring market shares for each tool, but his market share calculations consider only a limited aspect of each tool’s functionality. He does not calculate market shares by looking at all ad impressions transacted by each ad tech tool. Instead, he calculates market shares by looking only at “open-web display ads”

transacted. Lee’s market share calculations, based only on “open-web display ad” impressions, are not a reliable reflection of Google’s share of each of the markets as he defines them—markets for tools that can (and do) transact many other types of ads.

A. Lee’s Market Share Calculations Must Consider All Ad Impressions Transacted by Each Tool That Can “Readily Shift” from Transacting Non-Open-Web Display Ad Impressions to Transacting More Open-Web Display Ad Impressions.

“Two products produced interchangeably from the same production facilities are presumptively in the same market.” Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 561 (5th ed. 2023). This principle results from the directive that in defining a market, “one must consider substitution both by buyers and sellers.” *Blue Cross & Blue Shield United of Wisc. v. Marshfield Clinic*, 65 F.3d 1406, 1410 (7th Cir. 1995), *as amended on denial of reh’g* (Oct. 13, 1995); *see also Stiles v. Walmart, Inc.*, 639 F. Supp. 3d 1029, 1047 (E.D. Cal. 2022) (“Two indicators define a market’s boundaries, one on the demand side and one on the supply side.”); *Bepco, Inc. v. Allied-Signal, Inc.*, 106 F. Supp. 2d 814, 823 (M.D.N.C. 2000) (citing *Brown Shoe*, 370 U.S. at 325); *J.H. Westerbeke Corp. v. Onan Corp.*, 580 F. Supp. 1173, 1185 (D. Mass. 1984) (citing *Brown Shoe*, 370 U.S. at 325 n.42).

On the demand side, customers of ad tech are paying for technology that services many types of ads, and necessarily will compare products based on the full feature set of the products. Lee contends that the ability to transact “open-web display ads” is “distinct and valuable” to customers, but even accepting that is true, he did not analyze the other features of the products here and their importance to customers. Ex. 8 at 61:2-17, 118:4-19. The fact that one feature of a product is “distinct and valuable” does not inform the Court about the demand for the product as a whole. Even Lee conceded at his deposition that he could not identify a single publisher or

advertiser who specifically valued ad tech tools for their ability to transact “open-web display ads” compared to other functionality of which each tool is capable. *Id.* at 122:9-123:21.

As would be the case if an expert isolated one feature of a Swiss Army knife without analyzing the demand for the Swiss Army knife in its totality, Dr. Lee has done no demand analysis for his market definition of the actual products here. It is difficult to conceive of a more unreliable market analysis than one that does not analyze the demand for a product as a whole.

On the supply side, “if producers of product X can readily shift their production facilities to product Y, then the sales of both should be included in the relevant market.” *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1436 (9th Cir. 1995); *see also Twin City Sportservice, Inc. v. Charles O. Finley & Co.*, 512 F.2d 1264, 1271 (9th Cir. 1975) (“Where the degree of substitutability in production is high, cross-elasticities of supply will also be high, and again the two commodities in question should be treated as part of the same market.”). Here, ad tech tools that have the ability to transact “open-web display ads,” as well as in-app ads, connected TV ads, native ads, or other types of ads, by definition can shift production between ad types.¹² There is an obvious ability for ad tech suppliers included in Lee’s markets to substitute between transacting “open-web display ad” impressions and other ad format impressions because they are already transacting both. *See Bepco*, 106 F. Supp. 2d at 824.

¹² *E.g.*, Ex. 1, ¶ 85 n.78 (“Publisher ad servers may also be able to handle the sale of non-display (e.g., in-stream video) or in-app display advertising.”); *id.* ¶¶ 122, 422 (Google Ads enables advertisers to buy ads in apps and on Google’s O&O inventory, including YouTube video ads); Ex. 3, ¶ 103 (“The relevant product markets contain those tools (publisher ad servers, ad exchanges, and advertiser ad networks) that transact open-web display advertising; such tools can also transact other forms of advertising, including direct deals, in-app display, and in-stream video ads.”); Ex. 8, Dep. 98:19-99:11 (“some of the participants within the ad exchange product market that I evaluate can transact other forms of digital advertising than open-web display”); *id.* at 101:17-102:1 (“I believe there exist ad exchanges that can serve connected TV digital advertising.”); *id.* at 105:1-7 (“I can’t name a specific [ad exchange] that I know definitively does not transact other forms of digital advertising than open-web display.”).

Numerous cases are instructive in demonstrating that where a supplier can readily shift from producing one product to another, sales of both must be included in the market. In *Rebel Oil*, self-serve gasoline retailers argued the relevant market included “all retail sales of gasoline in Las Vegas, except for sales of full-serve gasoline.” 51 F.3d at 1434. Defendant responded that the market “consist[ed] of all sales of retail gasoline in Las Vegas, including full-serve gasoline.” *Id.* at 1435. The Ninth Circuit affirmed the district court’s finding that a “reasonable market definition must also be based on ‘supply elasticity,’” and thus the relevant product market had to include sales of full-service gasoline, based on the “ease by which marketers can convert their full-serve facilities to increase their output of self-serve gasoline requires that full-serve sales be part of the relevant market.” *Id.* at 1436.

Similarly, in *Bepco*, plaintiff offered two alternative product markets for airbrake components—a broad market that encompassed all replacement compressors and valves, and a narrower market that encompassed only replacement compressors and valves referred to as “Bendix” compressors and valves. 106 F. Supp. 2d at 822-23. Plaintiff’s expert, who opined that the narrower market definition was appropriate, considered only demand-side evidence, in particular, whether a consumer with a worn-out Bendix compressor could replace it with a non-Bendix compressor. *Id.* at 823. The court found that the record revealed both “entry into the aftermarkets for compressors and valves by new re-manufacturers,” and also “expansion of production by existing competitors,” and stated that if “re-manufacturers of Bendix and non-Bendix parts can easily adjust and reallocate productive capacity between the two products,” a proper market definition would include “all replacement compressors and all replacement valves.” *Id.* at 824.

Likewise, in *J.H. Westerbeke*, plaintiff argued that a relevant product market consisted only of “marine diesel gensets in the 0 to 30 kilowatt range, adapted for pleasure boat use,” in part based upon the argument premised on demand-side substitution that “the pleasure boat segment of the genset market has its own identifiable customers.” *Id.* at 1186. The defendant argued the relevant market included “the broad range of gasoline and diesel gensets of all applications.” *Id.* The court found it was clear that all gensets of all sizes “are produced in common facilities,” *id.*, and held that the broader market was proper, because products “produced in common facilities should be included in the same market where the facilities are freely convertible from one product to the other,” “regardless of whether it is likely that such increased production would ever be warranted.” *Id.* at 1187.¹³

B. Lee’s Market Share Calculations Are Unreliable Because They Fail to Account for All Ad Impressions That Must Be Considered in Evaluating Google’s Share of the Relevant Markets.

Lee’s market share calculations are inconsistent with both the markets he concedes he has defined, as well as the markets as they must be defined under the law. For the purposes of calculating market shares for the multifunctional tools he includes in his market, Lee considers

¹³ Multiple courts of appeals have warned against defining product markets without taking into account cross-elasticity of supply. *E.g.*, *Rebel Oil*, 51 F.3d at 1436 (9th Cir.) (rejecting plaintiff’s narrow market definition where plaintiff’s expert failed to account for cross-elasticity of supply); *Blue Cross & Blue Shield United of Wisc. v. Marshfield Clinic*, 65 F.3d 1406, 1410-11 (7th Cir. 1995) (Posner, J.) (“Even if two products are completely different from the consumer’s standpoint, if they are made by the same producers an increase in the price of one that is not cost-justified will induce producers to shift production from the other product to this one in order to increase their profits by selling at a supracompetitive price.”); *Virtual Maintenance, Inc. v. Prime Computer, Inc.*, 11 F.3d 660, 665 (6th Cir.1993) (“The relevant product market cannot be determined without considering the cross-elasticity of supply.”), *cert. dismissed*, 512 U.S. 1216 (1994); *see also Gulf States Reorganization Grp., Inc. v. Nucor Corp.*, 822 F. Supp. 2d 1201, 1235 (N.D. Ala. 2011), *aff’d*, 721 F.3d 1281 (11th Cir. 2013) (“The Eleventh Circuit has noted that any economically meaningful relevant product market definition must take into account evidence of virtually complete ‘supply substitution.’”).

only a single aspect of how the tools are used by “restrict[ing] attention to open-web display” impressions. Ex. 3, ¶ 140; *see also* Ex. 8 at 92:3-16 (“I compute market shares for publisher ad servers over open-web display transactions”), 104:6-16, 105:18-106:4 (“I computed market shares for ad exchanges over indirect open-web display impressions”), 114:22-115:6 (“the market share calculations that I performed related to advertiser ad networks are with respect to open-web display impressions”), 197:4-10. Lee’s singular focus on “open-web display ad” impressions when calculating market shares for tools that are capable of transacting “open-web display ads” as well as many other types of ad formats renders his market share calculations unreliable. He should have measured each tool’s share of the market by evaluating its share of all impressions transacted, but instead he evaluates only a subset of those impressions. As a result, there is a fatal mismatch between the markets Lee defines—markets for tools capable of transacting “open-web display ads”—and his market share calculations, which evaluate only each tool’s share of all “open-web display” impressions transacted. In short, his market share calculations do not measure shares of the markets he defines.

Moreover, Lee does not analyze the competitors in his proffered markets to understand what features they offer and how the actual products in his markets compete. Based on the totality of features, such as the ability to transact in-app and connected TV ads, the ad tech tools Lee excludes could “readily shift” to enable open-web display ad impressions, but Lee does not analyze that competition, rendering his analysis unreliable. *Rebel Oil*, 51 F.3d at 1436 (“if producers of product X can readily shift their production facilities to product Y, then the sales of both should be included in the relevant market”); *cf. Apple*, 67 F.4th at 975 (If the “sales of other producers [could] substantially constrain the price-increasing ability of the monopolist or hypothetical cartel,

these other producers must be included in the market”).¹⁴

Because Lee’s market share calculations do not measure shares of the actual markets at issue, they are unreliable and should be excluded. *See Am. Bearing Co. v. Litton Indus., Inc.*, 729 F.2d 943, 949 n.14 (3d Cir. 1984) (affirming district court decision holding expert testimony “should have been excluded” where “the inconsistencies between that part of [the expert’s] testimony that defined a relevant market and that addressing market share and damages increased the likelihood that his testimony would confuse and mislead the jury”); *cf. TYR Sport, Inc. v. Warnaco Swimwear, Inc.*, 709 F. Supp. 2d 821, 833-34 (C.D. Cal. 2010) (expert testimony excluded as unreliable and not based on sufficient facts or data where market share analysis did not analyze market share of all competition in market); *see also Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997) (“But nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.”); *Water Craft Mgmt., L.L.C. v. Mercury Marine*, 361 F. Supp. 2d 518, 544 (M.D. La. 2004) (“The evidence presented in this case established that Mercury had other competitors in the boat engine market, but Dr. Wood’s focus was only on Mercury engines”).

CONCLUSION

For the foregoing reasons, Google respectfully requests that the Court exclude Lee’s proposed testimony on market definition and market share.

¹⁴ *See also Twin City Sportservice*, 512 F.2d at 1272 n.1 (“Even if we agreed with the trial court’s basic premise, that the provision of concession services to major league baseball was the relevant market, its failure to include as participants in that market baseball clubs which supply their own concessions very likely would compel reversal on that ground. Thus, the exclusion from the relevant market of baseball teams which run their own concessions operations—a pro-competitive influence in that market—could not be supported even under the trial court’s conceptualization.”).

Dated: April 26, 2024

Of Counsel for Google LLC:

Eric Mahr (*pro hac vice*)
Andrew Ewalt (*pro hac vice*)
Julie Elmer (*pro hac vice*)
Justina Sessions (*pro hac vice*)
Lauren Kaplin (*pro hac vice*)
Jeanette Bayoumi (*pro hac vice*)
Claire Leonard (*pro hac vice*)
Sara Salem (*pro hac vice*)
Tyler Garrett (VSB # 94759)
FRESHFIELDS BRUCKHAUS
DERINGER US LLP
700 13th Street, NW, 10th Floor
Washington, DC 20005
Telephone: (202) 777-4500
Facsimile: (202) 777-4555
eric.mahr@freshfields.com

Daniel Bitton (*pro hac vice*)
AXINN, VELTROP & HARKRIDER LLP
55 2nd Street
San Francisco, CA 94105
Telephone: (415) 490-2000
Facsimile: (415) 490-2001
dbitton@axinn.com

Bradley Justus (VSB # 80533)
AXINN, VELTROP & HARKRIDER LLP
1901 L Street, NW
Washington, DC 20036
Telephone: (202) 912-4700
Facsimile: (202) 912-4701
bjustus@axinn.com

Respectfully submitted,

/s/ Craig C. Reilly

Craig C. Reilly (VSB # 20942)
THE LAW OFFICE OF
CRAIG C. REILLY, ESQ.
209 Madison Street, Suite 501
Alexandria, VA 22314
Telephone: (703) 549-5354
Facsimile: (703) 549-5355
craig.reilly@ccreillylaw.com

Karen L. Dunn (*pro hac vice*)
Jeannie S. Rhee (*pro hac vice*)
William A. Isaacson (*pro hac vice*)
Amy J. Mauser (*pro hac vice*)
Martha L. Goodman (*pro hac vice*)
Bryon P. Becker (VSB #93384)
Erica Spevack (*pro hac vice*)
PAUL, WEISS, RIFKIND, WHARTON &
GARRISON LLP
2001 K Street, NW
Washington, DC 20006-1047
Telephone: (202) 223-7300
Facsimile (202) 223-7420
kdunn@paulweiss.com

Meredith Dearborn (*pro hac vice*)
PAUL, WEISS, RIFKIND, WHARTON &
GARRISON LLP
535 Mission Street, 24th Floor
San Francisco, CA 94105
Telephone: (628) 432-5100
Facsimile: (202) 330-5908
mdearnborn@paulweiss.com

Counsel for Google LLC